

Process Safety Management Audit Checklist

Mechanical Integrity

	Y/N	Comments
Documentation		
<p>Does the written mechanical integrity program include:</p> <ul style="list-style-type: none"> • Pressure vessels and storage tanks? • Piping systems and components such as valves? • Relief and vent systems and devices? • Emergency shutdown systems? • Controls (including monitoring devices and sensors, alarms and interlocks)? • Pumps? 		
<p>Are there written procedures to maintain the on-going integrity of process equipment? Does the documentation indicate the procedures have been implemented?</p>		
<p>Has training been provided to each employee, including contractor employees, involved in maintaining the on-going integrity of process equipment in the following:</p> <ul style="list-style-type: none"> • An overview of the process and its hazards? • Procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner? (Review certification documents for employees doing non-destructive tests, welding on pressure vessels, etc., where these certifications are required.) 		

Are inspections and tests performed on each item of process equipment included in the program?		
Do inspection and testing procedures follow good engineering practices?		
Are inspection and test frequencies consistent with the manufacturer's recommendation and good engineering practice? Are inspections and tests performed more frequently if determined necessary by operating experience?		
<p>Is there documentation of each inspection and test that has been performed including all of the following:</p> <ul style="list-style-type: none"> • Date of the inspection or test? • Name of person performing the procedure? • Serial number or other identifier of equipment on which procedure was performed? • Description of inspection or test performed? • Results of inspection or test? 		
Are deficiencies in equipment that are outside limits (as defined in process safety information) corrected before further use or in a safe and timely manner when necessary means are taken to assure safe operation?		
In the construction of new plants and equipment, does the company assure that equipment as it is fabricated is suitable for the process for which it will be used?		
Have appropriate checks and inspections been made to assure equipment is installed properly and consistent with design specifications and manufacturer's instructions? (Include contractor supplied equipment.)		

Does the company assure that maintenance materials, spare parts, and equipment are suitable for the process application for which they are used? (Include contractor supplied equipment.)		
Observations		
Do observations of a representative sample of process equipment indicate deficiencies outside acceptable limits? (Compare process safety information criteria with the conditions of the equipment found in the process.)		
If new plants or equipment are being constructed, do observations indicate that the equipment as it is fabricated is suitable for the process application?		
Do observations of a representative sample of maintenance materials, spare parts, and equipment indicate that they are suitable for the process application for which they will be used?		
Interviews		
Engineers		

<p>Based on interviews with a representative number of engineers, have procedures to maintain the on-going integrity of the process equipment been implemented for:</p> <ul style="list-style-type: none"> • Pressure vessels and storage tanks? • Piping systems and components such as valves? • Relief and vent systems and devices? • Emergency shutdown systems? • Controls (including monitoring devices and sensors, alarms and interlocks)? • Pumps? <p>(Ask about the possibility of safety-critical equipment being inadvertently rendered inoperative. For example, a relief device might be isolated by closing an upstream valve.)</p>		
<p>Based on interviews with a representative number of engineers, do the inspection and testing procedures follow recognized and generally accepted good engineering practice? Has prior operating experience indicated a need for a more frequent test and inspection schedule than has been implemented?</p>		
<p>Based on interviews with a representative number of engineers, are equipment deficiencies corrected before use when they are outside the acceptable limits? If not, are the deficiencies corrected in a timely manner and are necessary means taken to assure safe operation?</p>		
<p>Based on interviews with a representative number of engineers, has the company assured that, for new plants and equipment, the equipment as it is fabricated is suitable for the process application? Are appropriate checks and inspections made to assure equipment is installed properly and consistent with design specifications and manufacturer's instructions? Are maintenance materials, spare parts, and equipment suitable for the process application for which they will be used? (Ask about contractor supplied items.)</p>		

Maintenance		
Based on interviews with a representative number of maintenance employees (and, where applicable, contractor maintenance employees), have the written procedures for maintaining the on-going integrity of process equipment been implemented?		
Based on interviews with a representative number of employees and contractor employees involved in maintaining the on-going integrity of the process, have they been trained to assure they can perform their tasks in a safe manner? Did the training include an overview of the process, its hazards, and procedures applicable to the job? (Determine if certification, specialized training, or unique qualifications are required.)		
Based on interviews with a representative number of maintenance employees, do test and inspection procedures follow recognized and generally accepted good engineering practices? Is the frequency of inspections and tests consistent with applicable manufacturer's recommendations and good engineering practices? Are more frequent inspections and tests necessary due as indicated by prior operating experience?		
Based on interviews with a representative number of maintenance employees, are equipment deficiencies that are outside acceptable limits corrected before further use? If not, are corrections made in a timely manner and are necessary means taken to assure operation?		
Based on interviews with a representative number of maintenance employees, are maintenance materials, spare parts, and equipment suitable for the process application for which they are intended? (Ask about availability and use of substitutes.)		